

ST149

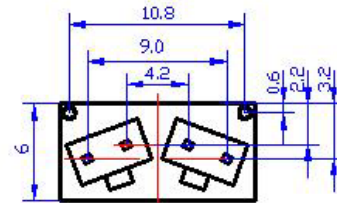
● Features

- Combines high output GaAs IRED with high sensitive phototransistor.
- The focus of detection is 3.5mm.
- Non-contact detecting manner

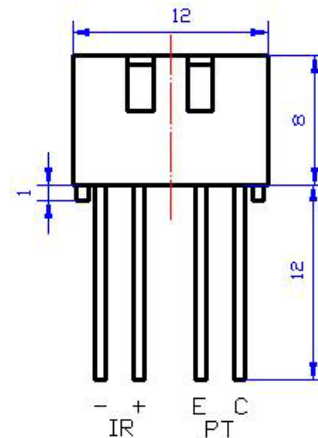
● Applications

- IC card electric power meter.
- AMR system.
- Water meter.
- Measure rotating speed and moving distance etc.

● Dimensions Unit:mm  
Unless otherwise specified,  
the tolerances are  $\pm 0.2\text{mm}$



BOTTOM VIEW



FRONT VIEW

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I <sub>F</sub>	50	mV
	Reverse Voltage	V <sub>R</sub>	6	V
	Power Dissipation	P	75	mW
Output	Collector-Emitter Voltage	V <sub>CEO</sub>	25	V
	Emitter-Collector Voltage	V <sub>ECO</sub>	6	V
	Collector Power Dissipation	P <sub>C</sub>	50	mW
*Operating Temperature		T <sub>opr</sub>	-20~65	°C
Storage Temperature		T <sub>stg</sub>	-30~75	°C
** Soldering Temperature		T <sub>sol</sub>	260	°C

\* The special requirement could be met according to customer's request.

\*\*Soldering time: 5s max. Soldering position: at least 1.5mm from the base of the package.

● Electro-Optical Characteristics(Ta=25°C)

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	-	1.25	1.5	V
	Reverse Current	I <sub>R</sub>	V <sub>R</sub> =3V	-	-	10	μ A
Output	Collector Dark Current	I <sub>CEO</sub>	V <sub>CE</sub> =20V	-	-	1	μ A
	Collector Light Current	I <sub>L</sub>	V <sub>CE</sub> =5V I <sub>F</sub> =8mA L3	0.4	-	-	mA
	Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	I <sub>F</sub> =8mA I <sub>C</sub> =0.15mA	-	-	0.4	V
Transfer Character-istics	Response Time	Rise Time	I <sub>F</sub> =20mA V <sub>CE</sub> =5V RC=100	-	10	-	μ S
		Fall Time		-	10	-	

Notes: Collector light current I<sub>L</sub>, Collector-emitter saturation voltage V<sub>CE(SAT)</sub>, Relative current , Response time is measured within 2~5mm between photointerrupter's top and reflecting surface. Its value is affected by the smooth of light reflecting surface.

Fig.1 Forward current vs. forward voltage

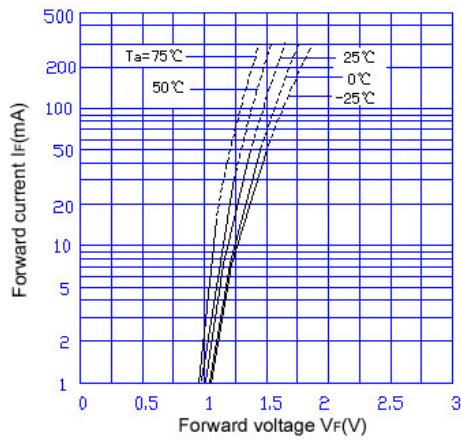
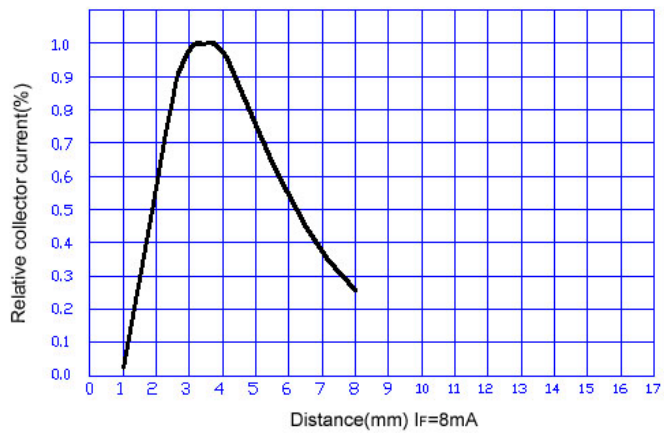


Fig.2 Relative collector current vs. distance



- Distance in Fig.2 is from photointerrupter's top to the reflecting surface.
- The reflecting surface is a sub-reflection aluminium plate. its surface is parallel to the top of photointerrupter.
- When relative collector current rises to 1.0, the conversion efficiency is the highest under this distance.
- The curves above are for you reference.